

# **Embedded Linux Conference Europe LinuxCon Europe Report**

**2015.11.13 (Fri)**

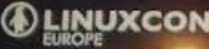
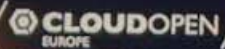

**Panasonic Corporation  
Shinsuke Kato**

**[kato.shinsuke@jp.panasonic.com](mailto:kato.shinsuke@jp.panasonic.com)**

- **Embedded Linux Conference Europe / LinuxCon Europe / Cloud Open**  
**3つのConferenceが共催**
- **場所: Congress Centre Dublin**
- **期間: 2015/10/5～7 の 3日間**
- **参加者(登録者): 1000人超**
  - **ELCEで600人, LinuxConで480人**
  - **ちなみに昨年は登録者2000人. 昨年度は特別多かったが今年度も引き続き盛況**
    - **なお, 会場キャパの都合もあり来年はELCEとLinuxCon-Eは同時ではなくconjunctionに開催(月火水: LinuxCon, 木金: ELCE)**
- **Co-Located Events も多数あり**

**3つのConferenceが共催なので、**  
**Sessionは・・・**

# 13会場 同時進行

**BEHIND THE CODE**


LinuxCon	CloudOpen	ELC
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# OCTOBER 5-7, 2015

## DUBLIN, IRELAND

**MONDAY**  
 Continental Breakfast - (3rd Floor Foyer)  
 Keynotes - Auditorium (3rd Floor)  
 Coffee Breaks - The Liffey (1st Floor Technology Showcase)

	EcoCom	Liffey Hall 1	Liffey Hall 2	Liffey Meeting 1	Liffey Meeting 2	Auditorium	Liffey Meeting 3	Wicklow Meeting 1	Wicklow Meeting 5	Wicklow Hall 1	Wicklow Hall 2A	Wicklow Hall 2B	Wicklow Meeting 3
7:30 AM													
8:00 AM	Registration & Continental Breakfast												
8:10 AM	<b>Introductory Remarks • Jim Zemlin, The Linux Foundation</b>												
8:30 AM	<b>KEYNOTE: Men vs. Machine: High Frequency Trading and the Rise of the Algorithm – Sean Gourley, Quid</b>												
9:00 AM	<b>KEYNOTE: Transforming for the Digital Economy with Open Technology – Stefano Chiaro, Director and Business Line Executive for Scale-Out Power Systems, IBM</b>												
9:30 AM	<b>KEYNOTE: The Future of Drones &amp; Open Source – Lorenz Meier, Dronecode Project &amp; Telly Tools, Open Source Robotics Foundation</b>												
10:10 AM	Break												
10:30 AM	Winning the Open Source Play in Government, The Rights, The Laws and Community Code... <i>Aimee Marcus Forestrom, NSW State Library Australia</i>	BulletProof 3.0: Recent Advances in Network Queuing <i>Stephen Hemminger, Brocade Communications Systems</i>	Secure Server Docker Gutierrez, S Oen d.o.o.	Towards Application Driven Storage: Controlling Data Placement and Garbage Collection using RocksDB with LightNVM <i>Javier Gonzalez, CITE Labs</i>	Don't Feed the Bugzilla - Squash (Haizen) Bugs Before Release <i>Klaus van Gerd, Vector Fabrics</i>	What Does Container Security Actually Look Like? <i>Matthew Garrett, CoreOS</i>	Wide-Area Docker with Clacker and Swarm <i>Andrew Kennedy, Cloudsoft</i>	Understanding Distributed Databases <i>Chris Ward, Crate.io</i>	OpenStack Containers <i>Stephen Bourke, Oracle</i>	Linux - The Future For Drones <i>Lucas De Marchi, Intel</i>	BoF: kernel.org: Upstream Kernel Testing <i>Kevin Hilman, Linaro</i>	Shared Logging Between the Kernel and the Bootloader <i>Sean Hildner, Mentor Graphics</i>	Deadline Scheduler in the Audio Domain <i>Dan Harrison, Canonical</i>
11:30 AM	Above and Beyond the Platform with CentOS Linux <i>Jim Perin, Red Hat</i>	The State of Open Networking: It's Not Open Enough <i>Michael Zayatz, HP</i>	Read The F* Manual? Write a Better F* Manual <i>Rich Bowen, Red Hat</i>	Container Management APIs: An Overview <i>Serge Halpin, Canonical</i>	Kernel Maintenance: An Oral Tradition <i>Gregory Clement, Free Electrons</i>	The New Cloud Foundry Runtime: Heterogeneous Container Scheduling, Docker... <i>David Sout, Pivotal</i>	sWid SR-I/O Support <i>Dan Kegelberg, Red Hat</i>	Evil Programmer's HOWTO: Launching Cloud Native To Do Your BIDDING <i>Daniel Watkins, Canonical</i>	Enabling Modern OpenDaylight Deployments <i>Daniel Farrell, Red Hat</i>	So You Want to Write a Linux Driver Framework <i>Michael Tsouletis, BayLibre</i>	Making Open Source Hardware Approachable: The Future is Now! <i>James Robinson, Intel</i>	Intelligent IoT Gateway on OpenWrt <i>Andrzej Wincowski, Yato</i>	Container Mechanics in sht and Linux <i>Allan Croquet</i>
12:30 PM	Lunch Break (Attendees on Own)												
2:00 PM	Estimating Software Effort using FOSS Data <i>Paul Sharwood, CodeThink</i>	How to Be Affordable Supercomputing at Home <i>Kristina Kaparova &amp; Jean Michel Selkirk, Bulgarian Academy of Sciences</i>	Enhance OpenSSH for Fun and Security <i>Julien Pivrot, Inuits</i>	Expanding the Open Source Linux Ecosystem to Drive Build Innovation and Higher Value Using IBM LinuxONE <i>Mohamed Radwan, IBM</i>	Available For BoFs Speak To Registration Desk	What can Intel-Inspire Do For You - Introduction For OpenStack Discovering Hardware Capabilities of Baremetal Nodes <i>Yuko Mori, NEC</i>	Manageable Application Containers: Lightning Quick Updates, Scalable Security, Easy High Availability <i>Florian Haas, Asteexo</i>	Unifying Events and Logs in the Cloud <i>Eduardo Silva, Treasure Data</i>	Isn't it ironic? The Bare Metal Cloud <i>Monty Taylor, IBM</i>	OpenEmbedded: If We Had to Start All Over, What Would We Do Differently? <i>Keon Koo, Linaro</i>	How to Beat Linux in One Second <i>Jan Ahlberg, Autodesk GmbH</i>	Reprogrammable Hardware Support for Linux <i>Alan Tull, Altera</i>	Measuring and Reducing Crosslink Between Virtual Machines <i>Alexander Komarov, Intel</i>
3:30 PM	How to Make a Positive Impact in Open Source Without Doing Any Coding <i>Niklas Ruff, SanDisk</i>	eBPF as the Mainframe - Proven Filtering and More <i>Michael Holtevis, IBM</i>	When Traditional Configuration Management is Too Slow to Meet Your Needs <i>Kris Boyce, Inuits</i>	Use "strace" To Understand Your Shell (BASIS) <i>Harald Köhnig, Bosch Sensortec GmbH</i>	Extending Android's Platform Toolsets <i>Karin Yeghmour, Opensys</i>	Complex Applications in Containers <i>Jon Peddie, Red Hat</i>	Filesystems, SQL and NoSQL with Apache Hadoop <i>Michael Hauswirth, Mesosphere</i>	Introduction of a New OpenStack REST API: Why We Need to Use HTTP v2.1 API <i>Kerfahl Ohmichi, NEC</i>	Debugging the Virtualization Layer (libvirt and qemu) in OpenStack <i>Kashyap Chamarthy, Red Hat</i>	Current Challenges in USBFS <i>Richard Weinberger, sigma star gmbh</i>	How to Choose the Best Kernel For Your Embedded System <i>Hiroshi Munakata, Renesas Electronics</i>	Using FPGA For Driver Testing <i>Mark Mielut, DEAC Software Engineering</i>	Introducing the Industrial IO Subsystem: The Heart of Smart Objects <i>Daniel Babitsky, Intel</i>
4:00 PM	Maximum Performance: How to Get It and How to Avoid Pitfalls <i>Christoph Lameter, Gentoo</i>	Suspend/Resume at the Speed of Light <i>Len Brown, Intel</i>	Introduction to Advanced Bash Usage <i>James Parasciutti, Media Temple</i>	Reflections on Data Plane Performance, Jupyter and Ignite <i>Hall Jeram, Mellanox</i>	Anatomy of an Atomic KMS Driver <i>Laurent Pinchart, Imixs on Board</i>	The Life and Times of an OpenStack Virtual Machine Instance <i>Mark McLoughlin, Red Hat</i>	High Availability at 10000 IOPS Per Cinder Volume <i>Philipp Reiser, LINBIT</i>	Blind Detection in GlusterFS <i>Gowat Gang, Red Hat &amp; Venky Shankar, Red Hat</i>	High Performance VMs in OpenStack <i>Nikola Djukanov, Red Hat</i>	Order at Last: The New U-Boot Driver Model Architecture <i>Simon Glass, Google</i>	Unroll How To Customize LED Test For Your Platform <i>Kenji Re, Mitsubishi</i>	Overview of PCI(e) Subsystem <i>Kobun Viji Abraham &amp; R Vignesh, Texas Instruments</i>	Finding Cities (Or - Service Discovery Done Right) <i>Michael Hauswirth, Mesosphere</i>
4:30 PM	Break												
5:10 PM	<b>KEYNOTE: Kernel Developer Panel – Greg Kroah-Hartman, Kevin Hilman, Kristen Accardi, Julia Lawall, Stephen Hemminger, Moderated by Grant Lundy, Linaro</b>												
5:40 PM	<b>KEYNOTE: Achieving DevOps in a Multi-Vendor Distributed Environment – Roll Flax, Vice President of Engineering, SUSE</b>												
6:00 PM	<b>KEYNOTE: Ten Years of OIN – Keith Bergalt, OIN</b>												
6:30 PM	VIP Reception (Invitation Only for Speakers, Sponsors and Media) Buses Depart From CCD Between 6:00PM - 6:30PM												



**さらに, Co-Located Events が...**



# Co-Located Events

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# Co-Located Events

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# Keynote



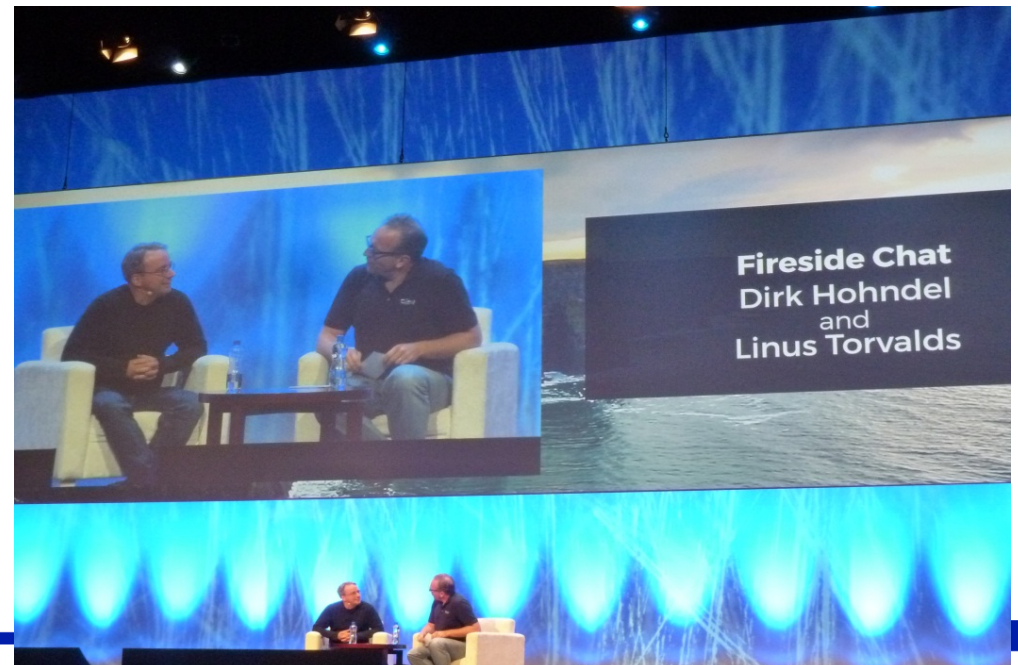
- **Introductory Remarks**
  - **Jim Zemlin, The Linux Foundation**
- **Man vs. Machine: High Frequency Trading and the Rise of the Algorithm**
  - **Sean Gourley, Quid**
- **Transforming for the Digital Economy with Open Technology**
  - **Stefanie Chiras, Director and Business Line Executive for Scale-Out Power Systems, IBM**
- **The Future of Drones & Open Source**
  - **Lorenz Meier, Dronecode Project and Tully Foote, Open Source Robotics Foundation**
- **Kernel Developer Panel**
  - **Moderated by Grant Likely**
- **Achieving DevOps in a Multi-Vendor Distributed Environment**
  - **Ralf Flaxa, Vice President of Engineering, SUSE**
- **Ten Years of OIN**
  - **Keith Bergelt, OIN**

- **Securing an Open Future**
  - Leigh Honeywell, Slack Technologies
- **Container Panel**
  - Moderated by Joe Brockmeier
- **Open Source Fueling the Growth of the Internet of Things**
  - Mark Skarpness, Intel
- **Fireside Chat**
  - Linus Torvalds and Dirk Hohndel
- **Linux Kernel SoC Support Mainlining Tips (By a Bunch of Other French People)**
  - Thomas Petazzoni, Free Electrons
- **Getting it right**
  - Martin Fink, HP
- **Building the J-Core CPU as Open Hardware: Disruptive Open Source Principles Applied to Hardware and Software**
  - Jeff Dionne, Smart Energy Instruments
- **Business Innovation within Huawei's Service Provider Operations (SPO) Lab**
  - David Mohally, Huawei



# Keynote

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- **Title : Introduction Remarks**
- **Speaker : Jim Zemlin**
- **トピック**

## **Real-Time Linux Collaborative Projectの発表**

- <http://www.linuxfoundation.org/news-media/announcements/2015/10/linux-foundation-announces-project-advance-real-time-linux>
- **Real-Time Linux Collaborative Project**
  - **Google, ARM, Intel, IBM, TIなどが設立メンバー**
  - **Thomas Gleixner がLFのフェローに就任**
  - **<http://www.linuxfoundation.org/collaborate/workgroups/real-time>**

- **Title : Introduction Remarks**
- **Speaker : Jim Zemlin**
- **トピック**
  - **OpenChain Workgroupの発表**
    - <http://www.linuxfoundation.org/collaborate/workgroups/openchain>
- **OpenChain**
  - サプライチェーンのなかで, **OSSコンプライアンスプログラム**のベストプラクティスの共有を進め, ベースラインプロセスの策定を目指す
    - **SPDXと互換性のあるフォーマットの策定, など**

- **Ten Years of OIN**
  - **Keith Bergelt, OIN**
- **トピック**
  - **Linux (OSS) での特許の問題解決**
  - **基本的に OSS開発者は特許を好まない. そこで, OINが特許周りの問題を解決 (パテントとロールから守る)**
  - **OSS Technologyを革新していく特許をプール**





- **Linux Kernel SoC Support Mainlining Tips (By a Bunch of Other French People)**
  - **Thomas Petazzoni, Free Electrons**
- **トピック**
  - **Mainlining活動の経験から**
    - **Knowledge Sharing**
    - **Motivation**
    - **Community**
    - **Small Company**
    - **Conferences & Networking**
    - **Focus**
    - **Right Tools**

- **Getting it right**
  - **Martin Fink, HP**
- **トピック**
  - **HPがOSS Officeを設立したのは1999年のこと**
  - **OSSライセンスが多過ぎる**
    - **The existence of too many types of open source licenses could cause interoperability problem – Martin Fink, 2005**
  - **Copyleftの方がコミュニティにあう (Permissiveと比べて)**
    - **Permissive: 寛容な, 許された.**
    - **このKeynoteの文脈では, 簡単に言うと, 「Apacheのように Copyleftまでは求めないライセンス」, CopyleftはGPLなど**
  - **Building successful communities together**
    - **Licensing -> Contribution -> Community engagement**

## Building successful communities together

**Community  
engagement**

**Licensing**

**Contribution**

- Active contribution & collaboration
- Diverse participation
- Solid core of code
- Recognizable mainline trunk
- Low barriers to entry for collaboration
- Unified, cohesive structure

**その他**



# Technical Showcase

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# Reception

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**Try to attend the  
conference !**

- 去年はあったのに無くなってる・・・  
→「**Convince Your Boss Linux**」でググる！
- その年の分は用意されていなくても、過去分や類似**Conference**のテンプレートが幾つかHitします

## Convince Your Boss

Want to attend The Embedded Linux Conference Europe 2014 but not sure how to bring up the subject with your boss? Well, we've got a sample letter to help make the process easier. See you in Düsseldorf!

### “Convince Your Boss” Letter

Dear {Boss Name},

I'd like to attend The Embedded Linux Conference Europe (ELCE) 2014 taking place October 13-15, 2014, in Düsseldorf, Germany. I've researched many conferences, and the Embedded Linux Conference is the premier vendor-neutral technical conference for companies and developers using Linux in embedded products. This conference, now in its 7th year, has the largest collection of sessions dedicated exclusively to embedded Linux and embedded Linux developers.

Over 1,000 of the most talented individuals in the industry gather together for this event—it's like a pop up think tank! We've seen the Linux ecosystem shift and grow exponentially in recent years, and much of the work that has led to these accomplishments happened at Embedded Linux Conference.

Here's how I envision my attendance at Embedded Linux Conference strengthening our company:



- **LinuxCon Europe**
  - <http://events.linuxfoundation.org/events/linuxcon-europe/program/slides>
- **ELCE**
  - <http://events.linuxfoundation.org/events/embedded-linux-conference-europe/program/slides>
- **Cloud Open**
  - <http://events.linuxfoundation.org/events/cloudopen-europe/program/slides>

上記リンクは最新Conferenceページで、順次アーカイブに移っていきます

追加で...

**11/09(月)の  
Enterprise User's Meeting より**

- **日時:2015/11/09(月) 13:00～18:00**
  - 毎年11月くらいに開催
- **参加者: 70～80人**
- **概要**
  - **ConferenceのKeynoteとPanelだけを集めたイベントで, 日本でOSS界隈のトピックを聴ける**
  - **参加費無料**
  - **同時通訳あり(日本人Panelは日本語メイン)**



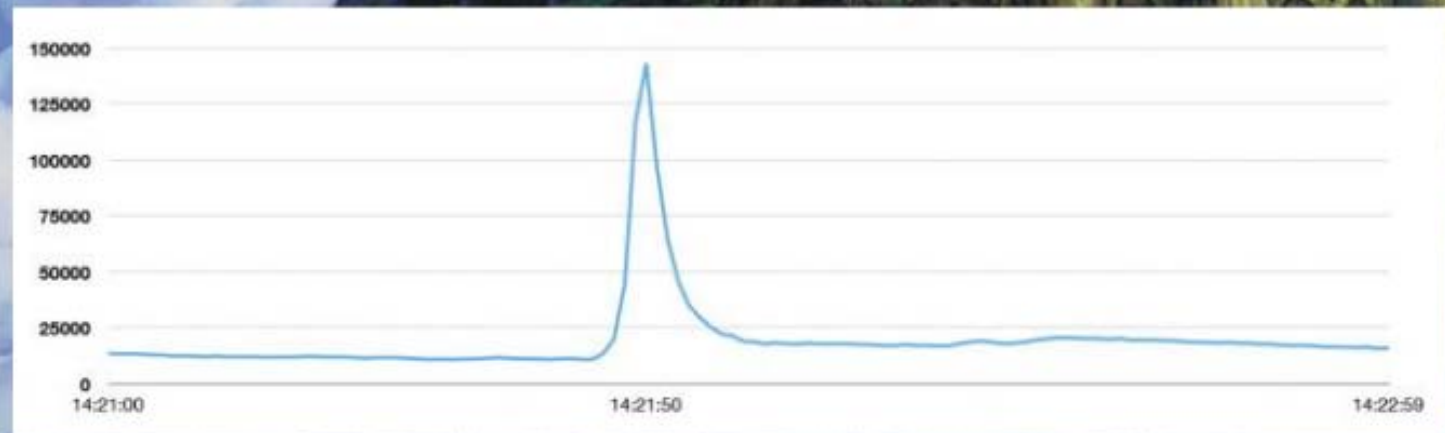
- **The State of Open Source in Business 2015: opportunities & challenges (2015 年のオープン ソース ビジネスの現状 – チャンスと課題)**
  - **Jim Zemlin, Executive Director, Linux Foundation**
- **Open source networking and the enterprise (オープン ソース ネットワークと企業)**
  - **Neela Jacques, Executive Director, OpenDaylight**
- **Code that Really Flies: Open Source on the ISS(本当に飛ぶコード: ISS に使われるオープン ソース)**
  - **KEITH G. CHUVALA, Technical Area Lead, NASA (ビデオ会議形式)**
- **A tale of Creative Destruction(創造的破壊の物語)**
  - **Jason Jackson, CTO for APJ, Pivotal**
- **OSS/PaaSで実現するビジネスの加速、サービスと利用事例**
  - **日本 CloudFoundry グループ**
- **Creating an Open Source Office: Lessons from Twitter(オープン ソース オフィスの立ち上げ: Twitter で学んだこと)**
  - **Chris Aniszczyk, The Linux Foundation**
- **SI Forum Panel: グローバルITと日本のITのギャップ分析 :日本のSIベンダの課題**
  - **The Linux Foundation SI FORUM**

- **Title: Creating an Open Source Office: Lessons from Twitter(オープンソース オフィスの立ち上げ: Twitter で学んだこと)**
- **Speaker: Chris Aniszczyk, The Linux Foundation**
  - **元Twitter所属. 昨年のEnterprise User's Meetingでの有名なスライド**
    - **[http://events.linuxfoundation.org/sites/events/files/scalingtwitter\\_chris\\_aniszczyk.pdf](http://events.linuxfoundation.org/sites/events/files/scalingtwitter_chris_aniszczyk.pdf)**

Miyazaki 2013

~~25,088 TPS~~ 143,199 TPS

<https://blog.twitter.com/2013/new-tweets-per-second-record-and-how>



バルス! (“Death to Twitter”)

- **Twitter社でのいくつかのプロジェクトのOSS化の経験から, Lesson & Learnedの紹介**
- **ライセンス**
  - ライセンスに何を選択するか？ GPLとの互換性の考慮, など. 十分に精査して選ばなければならない
- **Black Swans can Happen (予期せぬ出来事)**
  - プロジェクトが成功すると, リソースが必要になったり, プロジェクトに関わっている技術者の仕事の仕方も変わってくる. OSS化したプロジェクト以外の仕事はできない状況にもなる. また, メンバーの転職もある.
- **OSSの運営**
  - 一人の開発者が作っていたものをOSS化. どうOSSとして運営する？. オーナーシップを諦める？ コミュニティに任せる？
- **Foundations can help**
  - Foundationにすることで, そのプロジェクトがより大きくなれる

- **Forking Happens.**
  - **Upstream**を諦めてフォークして1年以上開発を続けた例もあった。→ 結果として、コミュニティを怒らせてしまった。
  - **Try to avoid forking at all costs if you can. If you do fork please notify and work with community on why.**
- **Collaboration from the start**
  - 実際に使っている他社と組んではじめることで、OSSの成功が近づく
- **Developer advocates are gold**
  - コミュニティは無料でなんでもやってくれるわけではない。自分達からいろいろと働きかけることが大事。コントリビュータにお礼を言うのも大事
- **You will have ugly babies**
  - 批判されるということは、その人達が活動を気にしてくれている。と思いましょう。
- **Diversity is the spice of life**
  - **Diversity**はプロジェクトが長い期間健全であるために重要
- **ノウハウ・知見の共有**
  - <http://todogroup.org/#>

# Thank you

**My e-mail address**  
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